



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,774	02/27/2002	Thomas A. Millott	67,008-038/S-5451	5463

26096 7590 10/19/2005

CARLSON, GASKEY & OLDS, P.C.
400 WEST MAPLE ROAD
SUITE 350
BIRMINGHAM, MI 48009

EXAMINER

PENDLETON, BRIAN T

ART UNIT

PAPER NUMBER

2644

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/083,774

Applicant(s)

MILLOTT ET AL.

Examiner

Brian T. Pendleton

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-16,18-20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-15 and 26-28 is/are allowed.
- 6) ☒ Claim(s) 1-6,16,18-20,22-25 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 6, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southward et al in view of Trantow et al. Southward discloses a system and method for active control of noise and vibration comprising control weights W0, W1, gain limiters in gain computation block 27', and adaptive filter 26' in figure 5. The control weights are varied over time. Southward does not disclose that the control weights are varied based upon a magnitude of the plurality of command signals. Trantow et al disclose an adaptive control system with weight update selective leakage wherein a leakage factor is varied as a function of the magnitude of the correction signal (command signal). See figure 2. The updated command signal output from adaptive filter 40 is based upon the leakage factor calculated. Therefore, it was taught to vary control weights based on the magnitude of the correction signal. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Southward by implementing the adaptive control method of Trantow in the gain computation block 27' for the purpose of constraining the actuator command signals to prevent saturation. Claims 1 and 5 are met.

Claims 2-4, 16, 18, 19, 22-25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Southward in view of Trantow as applied to claim 1 above, and further in view of Rossetti. The combination of Southward and Trantow does not disclose a plurality of force generators are activated based upon a plurality of command signals. Rossetti discloses an active structural control system and method comprising a plurality of sensors 42 for sensing noise and

Art Unit: 2644

force generators 12 for controlling the noise heard inside an aircraft cabin based on command signals related to the sensed noise. It would have been obvious to one of ordinary skill in the art at the time of invention to incorporate a plurality of sensors and force generators, as taught by Rossetti, for the purpose of providing the noise control system of Southward and Trantow in an environment that has multiple sources of noise disturbance, which was well known at the time of invention. Claims 2, 16, 18, 19, 22-25, and 29 are met. As to claims 3 and 4, the modified Southward apparatus would have a plurality of command signals for the plurality of force generators, with a plurality of control weighting components associated with the command signals. The teaching of varying the control weights over time would be established for each command signal.

Allowable Subject Matter

The indicated allowability of claims 17 and 21 is withdrawn in view of the newly discovered reference(s) to Trantow et al, US Patent 5,586,190. Rejections based on the newly cited reference(s) follow.

Claims 8-15, 26, 27, and 28 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Popovich, US Patent 6,094,601.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

Art Unit: 2644

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton
Primary Examiner
Art Unit 2644



btp